Approach to updating the inputs in Schedule 1 of the Wholesale Contract Regulatory Instrument

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1 BACKGROUND

1.1 Wholesale Financial Contract Regulation

Wholesale financial contract regulation was introduced in Tasmania on 1 January 2014 and requires Hydro Tasmania to offer authorised retailers operating in Tasmania, a number of regulated derivative contracts (regulated contracts) in addition to its standard over-the-counter derivatives contracts

The price of, and volume of electricity in, regulated contracts that Hydro Tasmania must offer is determined by the Wholesale Contract Regulatory Instrument (the Instrument).

1.1.1 Wholesale Contract Regulatory Instrument

Part 3, Division 4A of the *Electricity Supply Industry Act 1995* (the Act) requires the Economic Regulator (Regulator) to monitor and regulate Hydro Tasmania contracting activities with section 43G of the Act requiring the Regulator to approve the following:

- the types of derivative contracts that Hydro Tasmania must offer as Approved financial risk contracts;
- the standard form(s) (terms and conditions) for each approved financial risk contract type;
- the method for determining the prices for each approved financial risk contract type;
- the periods for which approved financial risk contracts are to be offered; and
- the volume of pproved financial risk contracts that Hydro Tasmania must offer.

The Regulator's decision on each matter is referred to as an 'approval' and is specified in the Instrument. The actual weekly regulated contract prices are calculated in the Wholesale Pricing Model (the Model) which is an Excel spreadsheet.

The Instrument also contains a schedule of inputs (Schedule 1) which are used in calculating the regulated contract prices and the volume of electricity that Hydro Tasmania must offer in regulated contracts. The initial values for the inputs in Schedule 1 were determined by Concept Consulting in 2013 a part of the contractual arrangement with the Electricity Reform Project run by the Department of Treasury and Finance.

The Regulator is responsible for administering the wholesale contract regulatory framework which includes conducing pricing investigations and updating Schedule 1 values as necessary.

1.2 Wholesale Contract Regulatory Instrument pricing investigations

Under Regulation 21 of the *Electricity Supply Industry (Pricing and Related Matters) Regulations 2013* (the Pricing Regulations) the Regulator is required to conduct a pricing investigation prior to making or revoking an approval. Further, the pricing investigation must be conducted prior to the expiry of the existing approvals made by the Minister under Regulation 20(1) of the Pricing Regulations (31 December 2018).

Market participants' had raised concerns about the potential impact on their respective forward contracting activities if the approvals were made close to the expiry date of the initial Instrument. Therefore, to provide market participants with as much certainty as possible, the Economic Regulator decided to complete the investigation and making the necessary approvals well before the initial Instrument's expiry date. Consequently, the Wholesale Contract Regulatory Instrument Pricing Investigation was completed in December 2016.

During the Investigation, both Hydro Tasmania and Aurora Energy made submissions relating to the Regulator's updating of Schedule 1 values. In response to these suggestions, the Regulator decided in the Final Investigation Report that:

- OTTER would prepare, and publish, a consultation paper setting out the Regulator's proposed approach to updating the Schedule 1 values; and
- the Regulator would consult on its proposed approach to updating the Schedule 1 values

A new Instrument applied from 1 January 2017 however this Instrument was subsequently revoked by the Regulator on 23 March 2017 so as to address an inconsistency between the Instrument and the wholesale pricing model (the inconsistency was present in the initial Instrument made on 6 November 2013). The current instrument commenced on 24 March 2017.

2 SCHEDULE 1 INPUTS

2.1 Source data and approach

In developing its proposed approach to updating values of the inputs in Schedule 1, representatives from OTTER, Hydro Tasmania and Aurora Energy attended a workshop on 2 February 2017.

OTTER also sought information on the data sources and methods used to determine the initial Schedule 1 input values from both the Department of Treasury and Finance and Hydro Tasmania. In addition, the Regulator engaged Concept Consulting (Concept) to provide advice on the current values for the inputs in tables one, three, four and six of the Schedule.

Concept's report was also required to include material that will be used by the Regulator to update each of these inputs in the future. In preparing its report, Concept held discussions with representatives of Hydro Tasmania, Aurora Energy and ERM Power.

Where possible, the Regulator remains committed to linking the input values to verifiable, independent, third party data.

2.2 Consultation

The Regulator released a Consultation Paper on 24 July 2017 seeking stakeholder feedback on the Regulator's proposed approach to updating the value of the Schedule 1 inputs. Consultation closed on 14 August 2017 with Hydro Tasmania making the only submission on the Consultation Paper. Hydro Tasmania's submission is available on the Regulator's website: www.economicregulator.tas.gov.au.

2.3 Approach to updating the inputs

The following sections outline:

- the current method for calculating the values for Schedule 1 inputs in the Instrument that applied from 24 March 2017 as set out in the Regulator's Consultation Paper;
- the methods proposed in the Consultation Paper released on 24 July 2017 for calculating the values for Schedule 1 inputs;
- the issues raised in submissions on the Consultation Paper;
- the Regulator's decision on the revised input values to apply from 5 September 2017; and
- the Regulator's decision on the method to update the input values in Schedule 1 in the future.

The Appendix summarises the current and revised Schedule 1 input values.

2.4 Inputs used in calculating regulated contract prices

The following inputs are used in calculating the regulated contract prices that Hydro Tasmania must offer each week.

2.4.1 Off-Peak Cap Values

The Off-Peak Cap Value refers to the Tasmanian market while the Off-Peak Cap Reference Value refers to the Victorian market. The values as at 24 March 2017 are shown in Table 1.

Table 1 Off-Peak Cap Values as at 24 March 2017

Defined term	Value
Off-Peak Reference Cap Value	$0.33/MWh
Off-Peak Cap Value	$0.33/MWh

2.4.1.1 Current calculation method

As there is no liquid market in off-peak derivative contracts the Off-Peak Reference Cap Value was inferred from Victorian spot prices. The value in Table 1 was derived from the average of ten years[1] of Victorian off-peak spot prices equal to or greater than $300 which were summed annually and the resulting value divided by the total number of off-peak hours in each year. When the initial Instrument was made there was not yet ten years of data for the Tasmanian market; therefore, for the initial Instrument, the Off-Peak Cap Value was deemed to equal the Off-Peak Reference Cap Value.

2.4.1.2 Proposed calculation method

The Regulator proposed continuing with the same method that was used for the initial Instrument but using Tasmanian Off-Peak spot prices for calculating the Off-Peak Cap Value as there is now ten years of historical Tasmanian spot prices.

Based on Victorian and Tasmanian off-peak spot prices equal to or greater than $300 for the ten years to 31 December 2016[2] the Regulator proposed an Off-Peak Reference Cap Value and an Off-Peak Cap Value as shown in Table 2.

[1] Q4 2002 to Q3 2012

[2] Data for calendar year 2009 was excluded from the calculation of the Off-Peak Cap Value due to Tasmanian spot prices in that year being influenced by a few periods of very high spot prices reflecting frequency control ancillary services (FCAS) bidding during that year.

Table 2 Proposed Off-Peak Reference Cap and Off-Peak Cap Values

Defined term	Value
Off-Peak Reference Cap Value	$0.002/MWh
Off-Peak Cap Value	$1.14/MWh

The Off-Peak Reference Cap Value is lower than the initial value because the current ten-year period of historical Victorian spot prices does not incorporate the price spikes that occurred early in the previous ten-year period.

The Off-Peak Cap Value differs from the deemed Victorian value as it reflects actual historical Tasmanian spot prices.

2.4.1.3 Submissions

In its submission, Hydro Tasmania expressed support for the Regulator's proposed approach to updating all of the Schedule 1 inputs with the exception of the proposed approach to calculating the Off-Peak Cap values.

In relation to calculating the Off-Peak Cap values, Hydro Tasmania suggested an alternative approach based on an independent broker's forward market curve.

The Regulator identified the following issues with Hydro Tasmania's alternative approach:

- despite increased volatility in spot prices over the last few years there hasn't been any change in the number of Victorian spot prices exceeding $300 during off-peak periods. The low number prices greater than $300 supports there being little or no appetite from market participants for off-peak caps and this is reflected in the low price;
- the inputs used in Hydro Tasmania's proposal are not publicly available;
- the proposed inputs are not based on the prices actually paid by market participants ie the assumption that the mid-point of the bid-ask spread is the price of the cap however no-one is actually transacting at this price;
- the method and data used by the broker to build the forward curve is not known;
- the use of a single broker potentially introduces bias; and
- the process Hydro Tasmania followed to choose the broker is not known.

2.4.1.4 Conclusions

Hydro Tasmania's proposed approach does not have the necessary transparency, clarity and accessibility and therefore does not meet the Evaluation Criteria that the Regulator outlined in its December 2015 Issues Paper (these Criteria were to be applied in conducting pricing investigations in relation to the Instrument) nor does it

meet the Regulator's commitment in the Consultation Paper to, where possible, link the Schedule 1 values to verifiable, independent, third party data.

2.4.1.5 Regulator's decision

The Regulator has decided to use the calculation method and the Off-Peak Cap values as set out in section 2.4.1.2 and Table 2 respectively.

2.4.2 Marginal Loss Factors

The Marginal Loss Factor values as at 24 March 2017 are shown in Table 3.

Table 3 Marginal loss factors - as at 24 March 2017

Defined term	Value
Maximum Export Marginal Loss Factor	0.88
Maximum Import Marginal Loss Factor	1.064
Off-Peak Marginal Loss Factor	1.002
Peak Marginal Loss Factor	0.94
Average Basslink Flow Export	500MW
Average Basslink Flow Import	462MW

The marginal loss factors (MLF) represent the expected price differences between Tasmania and Victoria and are the result of transmission losses and/or constraints over the Basslink interconnector.

2.4.2.1 Current calculation method

The value of the Average Basslink Flow Export is Basslink's technical specifications for sustainable operation. The initial value for Average Basslink Flow Import takes into account the amount of interruptible load available within Tasmania (if Basslink trips during periods of high import flow the availability of a sufficient amount interruptible load will assist in maintaining the Tasmanian supply demand balance).

The maximum import and export marginal loss factors are calculated using the dynamic loss equations for Basslink specified in AEMO's (Australian Energy Market Operator) *Regional Boundaries and Marginal Loss Factors for the 2011-12 Financial Year* and the maximum sustainable flow at the receiving end.

The Peak and Off-peak Marginal Loss Factors represent the expected price ratio between Tasmania and Victoria during peak and off-peak periods assuming zero net average energy flow between the regions over a quarter and are estimated so as to fit the observed historical quarterly average MLFs (Tasmania reference node relative to Victoria reference node). The factors were adjusted to give a minimum residual root square error over the relevant quarters.

2.4.2.2 Proposed calculation method

The Regulator proposed continuing with the same method that was used to calculate the Marginal Loss Factor values in Table 3.

The Regulator also proposed calculating updated Maximum Export and Import Marginal Loss Factors and Peak and Off-Peak Marginal Loss Factors annually however proposes not changing the Average Basslink Flow Export or the Average Basslink Flow Import unless there is a change in the technical capability of the Basslink Interconnector or there is a change in the amount of interruptible load.

Based on AEMO's Regional Boundaries and Marginal Loss Factors for the 2016-17 Financial Year and quarterly data for peak and off-peak MLFs and net quarterly imports from 2010 to 2017 (excluding the two quarters when Basslink was out of service) the Regulator proposed Marginal Loss Factor values as shown in Table 4.

Table 4 Proposed values for Marginal Loss Factors

Defined term	Value
Maximum Export Marginal Loss Factor	0.889
Maximum Import Marginal Loss Factor	1.066
Off-Peak Marginal Loss Factor	1.004
Peak Marginal Loss Factor	0.954
Average Basslink Flow Export	500MW
Average Basslink Flow Import	462MW

2.4.2.3 Submissions

Hydro Tasmania's submission supported the Regulator's proposed approach to calculating Marginal Loss Factors values.

2.4.2.4 Regulator's decision

The Regulator has decided to use the calculation method and the Marginal Loss Factors as set out in section 2.4.2.2 and Table 4 respectively.

2.4.3 New Committed Wind Generation

The values for New Committed Wind Generation as at 24 March 2017 are shown in Table 5.

Table 5 New Committed Wind Generation as at 24 March 2017

Quarter	New Committed Wind Generation (GWh)
Quarters ending 31 March	0
Quarters ending 30 June	0
Quarters ending 30 September	0
Quarters ending 31 December	0

2.4.3.1 Current calculation method

New Committed Wind Generation is defined in clause 28.1 in the Instrument as:

> (a) the amount specified in the table in Item 5 of Schedule 1 as the New Committed Wind Generation for the Quarter; or
>
> (b) such other amount as is determined by the Regulator from time to time to represent the aggregate forecast volume of electricity that will be generated in that Quarter from:
>
> (i) new Tasmanian wind generating capacity that is classified as "committed" in the Statement of Opportunities most recently published by AEMO; and
>
> (ii) wind generating plant at other sites with nameplate capacity of greater than 5MW in Tasmania which first exported electricity to TasNetworks' distribution or transmission systems less than three years before the relevant Calculation Date.

Based on AEMO's most recent Statement of Opportunities (September 2016) there was no new Tasmanian wind generating capacity that is classified as "committed". Furthermore, Musselroe Wind Farm Tasmania's, most recently constructed windfarm with nameplate capacity greater that 5MW, has been commissioned for more than three years therefore the current New Committee Wind Generation values was set to zero.

2.4.3.2 Proposed calculation method

AEMO has combined its Electricity Statement of Opportunities and Gas Statement of Opportunities into a single report – the Energy Supply Outlook. Based on the June 2017 Energy Supply Outlook, the Regulator proposed no changes to the values for New Committed Wind Generation shown in Table 5.

The Regulator also proposed continuing to update the values on the basis paragraph (b) of the definition of "New Committed Wind Generation" in Clause 28.1 of the Instrument.

2.4.3.3 Submissions

Hydro Tasmania's submission supported the Regulator's proposed approach to calculating New Committed Wind Generation values.

2.4.3.4 Regulator's decision

The Regulator has decided to use the calculation method and the values for New Committed Wind Generation as set out in section 2.4.3.2 and in Table 5 respectively.

2.4.4 Calculation of the Tasmanian Cap Value

The values for the Tasmanian Cap Value as at 24 March 2017 are shown in Table 6.

Table 6 Calculation of Tasmanian Cap Value – Input values as at 24 March 2017

Defined term	Value
Costing Quarter	Quarter ending 31 December 2012
Economic Life	30 years
Forecast Inflation Rate	2.7% p.a.
Nominal Post Tax Debt Cost	5.55% p.a.
Pre-Tax Real WACC	8.0% p.a.
Real Annual Operating Cost	$14.1/kW ($ as at Costing Quarter)
Real Total Capital Cost	$1 016/kW ($ as at Costing Quarter)
Construction Quarter	2026 Note 1

Note 1: The Construction Quarter date is based on the application of paragraph (b) of the definition of ***Construction Quarter*** in Clause 28.1 of the Instrument.

2.4.4.1 Current calculation method

The values for the following defined terms are from IPART's *Review of Regulated Retail Electricity Final Report*, June 2013[3]:

- Costing Quarter (the report is in 2012-13 dollars therefore December 2012 is deemed to be the midpoint of the 2012-13 financial year);
- Forecast Inflation Rate;
- Nominal Post Tax Debt Cost; and
- Pre-Tax Real WACC.

[3] https://www.ipart.nsw.gov.au/files/sharedassets/website/trimholdingbay/final_report_-_review_of_regulated_retail_prices_for_electricity_-_from_1_july_2013_to_30_june_2016.pdf

The values for the following defined terms are from Frontier Economics, *Input assumptions for modelling wholesale electricity costs, Final Report to IPART*, June 2013[4]:

- Economic Life;
- Real Annual Operating Cost; and
- Real Total Capital Cost.

The Construction Quarter is set at 2026, ten years after AEMO's most recent Statement of Opportunities (September 2016) and is as per paragraph (b) of the definition of Construction Quarter in clause 28.1 (b) in the Instrument[5]. That is:

> the earlier of:
>
> (a) the Winter Quarter in the earliest Calendar Year in which new capacity is required to maintain electricity grid reliability in accordance with the NEM Reliability Standard under the medium economic growth scenario considered by AEMO in its most recently published Statement of Opportunities; or
>
> (b) the Winter Quarter in the Calendar Year that is 10 years after the Calendar Year in which the most recent Statement of Opportunities was published by AEMO.

2.4.4.2 Proposed calculation method

The Tasmanian Cap Value inputs relate to the construction and operation costs of a generic gas fired open cycle peaking generator[6] at some point in the future. As IPART no longer regulates retail electricity prices IPART cannot be used as a source for the required data and unfortunately currently, there is no other single source of information which is as be used to update all the values in Table 6.

The Regulator proposed that the Forecast Inflation Rate is calculated as the midpoint of "CPI inflation" value for the furthest future period in Table 6.1, Output Growth and Inflation Forecasts, of the Reserve Bank of Australia's *Quarterly Statement of Monetary Policy*. Based on the May report the Regulator proposed a Forecast Inflation Rate of 2.5 per cent.

With regards to the Economic Life the Regulator proposed retaining the current value of 30 years as this is consistent the *2015 Australian Power Generation and*

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[4] https://www.ipart.nsw.gov.au/files/sharedassets/website/trimholdingbay/consultant_report_-_frontier_economics_-_input_assumptions_for_modelling_wholesale_electricity_costs_-_june_2013.pdf

[5] Page 56 of the Wholesale Contract Regulatory Instrument.

[6] Known as an open cycle gas turbine generator (OCGT).

Technology Report in AEMO's 2016 National Transmission Network Development Plan (NTNDP) database.[7]

The Regulator proposed an updated value for Real Total Capital Cost of $1 073/kW. This is sourced from the *2016 Planning Studies - Additional Modelling Data and Assumption Summary*[8] spreadsheet and is taken from the estimate for 2026-27 from the neutral cost scenario.

However, the fixed operating and maintenance costs for OCGTs sourced from the same spreadsheet is $4/kW/year which is disproportionally low compared to the values provided in the 2013 Frontier report. The Regulator therefore proposed using the value from the *2015 Australian Power Generation Technology Report* for an Aero open cycle turbine running on natural gas ie $10/kW/year in 2015 dollars. The Regulator proposed indexing this value by 1.3 per cent for inflation so that the updated value for the Real Annual Operating Cost is $10.13/kW/year for 2016.

The Regulator proposed updating the value for the Construction Quarter to 2017 as required by part (b) of the definition of Construction Quarter in the Instrument.

The Regulator proposed updating the Costing Quarter to June 2016 to align with the Operating and Capital Cost values.

In determining an applicable WACC the Regulator considered WACC data sourced from IPART, WACC data provided in AEMO' *2016 Planning Studies - Additional Modelling Data and Assumption Summary* spreadsheet and AEMO's 2017 Benchmark Reserve Capacity Price (BRCP)[9] for the 2019-20 Capacity Year (published December 2016). As IPART no longer publishes a WACC specifically for electricity generator's the WACC calculated using IPART data would be a combination of data from the 2013 IPART report and 2017 values. AEMO's spreadsheet shows a WACC of 7.03 per cent for an OCGT in Tasmania but does not specify whether the WACC is pre or post tax, nominal or real. The BRCP WACC (5.29 per cent) is a pre-tax real and is relatively current (2016). However Concept considered that an equity beta of 0.83, as used in the BRCP WACC, was relatively low for a merchant generator.

The Regulator considered that the WACC for BRCP is the most complete and recent source of WACC data for an OCGT generator and therefore will use BRCP WACC parameters except for the following: an equity beta equal of one; risk free rate of rate and debt risk premium which will equal the most recent 40 trading day averages for 10-year Commonwealth Government Bonds[10] and the RBA's 10-year BBB

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[7] http://www.co2crc.com.au/wp-content/uploads/2016/04/LCOE_Report_final_web.pdf

[8] http://www.aemo.com.au/Electricity/National-Electricity-Market-NEM/Planning-and-forecasting/National-Transmission-Network-Development-Plan/NTNDP-database

[9] https://www.aemo.com.au/-/media/Files/Electricity/WEM/Reserve_Capacity_Mechanism/BRCP/2017/Final-Report-Benchmark-Reserve-Capacity-Price-for-the-2019-20-Capacity-Year.pdf

[10] F2 Capital Market Yields – Government Bonds - FCMYGBAG10D

non-financial corporate bond spread[11] and gamma set to 0.4.[12] Applying these parameters the Regulator proposed a Pre-Tax Real WACC of 5.5 per cent.

Using the same data, the Regulator proposed a Nominal Post Tax Cost of 3.44 per cent. The Regulator's proposed values for the calculation of Tasmanian Cap values are shown in Table 7.

Table 7 Proposed values for Calculation of Tasmanian Cap Value

Defined term	Value
Costing Quarter	Quarter ending 30 June 2016
Economic Life	30 years
Forecast Inflation Rate	2.5% p.a.
Nominal Post Tax Debt Cost	3.44% p.a.
Pre-Tax Real WACC	5.5% p.a.
Real Annual Operating Cost	$10.13/kW ($ as at Costing Quarter)
Real Total Capital Cost	$1 073/kW ($ as at Costing Quarter)
Construction Quarter	2027 Note 1

Note 1: The Construction Quarter Date is based on the application of paragraph (b) of the definition of ***Construction Quarter*** in Clause 28.1 the Instrument.

2.4.4.3 Submissions

Hydro Tasmania's submission supported the Regulator's proposed approach to calculating the Tasmanian Cap Value.

2.4.4.4 Regulator's decision

The Regulator has decided to use the calculation method and the Tasmanian Cap values as set out in section 2.4.4.2 and Table 7 respectively.

2.4.5 Contract Premium

The Contract Premium values as at 24 March 2017 are shown in Table 8.

Table 8 Contract Premium as at 24 March 2017

Defined term	Value
Off-Peak Contract Premium	$3.40/MWh
Peak Contract Premium	$15.60/MWh

[11] F3 Aggregate Measures Of Australian Corporate Bond Spreads And Yields: Non-Financial Corporate (NFC) Bonds - FNFCBBB10M

[12] In response to the Full Federal Court of Australia (FFCA) decision of 24 May 2017 on gamma following the FFCA's review of the Australian Competition Tribunal's decision on the AER's electricity network revenue allowance determinations.

2.4.5.1 Current calculation method

The current values were sourced from IES's Report, *Review of Wholesale Energy Price for Period 2010-2013*.[13]

2.4.5.2 Proposed calculation method

The Regulator proposed maintaining the current values on the basis that the costs of obtaining relevant data and an independent review of the contract premium outweighed the benefits of reviewing the values as regulated prices are relatively insensitive to large changes in the contract premiums.

2.4.5.3 Submissions

Hydro Tasmania's submission supported the Regulator's proposed values for calculating the Contract Premium.

2.4.5.4 Regulator's decision

The Regulator has decided to use the calculation method and the values for the Contract Premium as set out in section 2.4.5.2 and Table 8 respectively.

2.5 Inputs relating to volume

The following inputs are used in calculating the minimum volume of electricity, in terms of capacity (MW) and energy (GWh) that Hydro Tasmania must offer each week in regulated contracts to retailers operating in the Tasmanian market.

2.5.1 Absolute Minimum Capacity Offer Volume

The Absolute Minimum Capacity Offer Volume (AMCOV) values as at 24 March 2017 are shown in Table 9.

Table 9 AMCOV as at 24 March 2017

Quarter	Absolute Minimum Capacity Offer Volume (MW)
Quarters ending 31 March	4.3
Quarters ending 30 June	6.9
Quarters ending 30 September	6.6
Quarters ending 31 December	5.1

13 http://www.economicregulator.tas.gov.au/domino/otter.nsf/LookupFiles/095869_Review_of_Wholesale_Energy_Price_for_Period_2010_2013.pdf/$file/095869_Review_of_Wholesale_Energy_Price_for_Period_2010_2013.pdf

2.5.1.1 Current calculation method

The current values are calculated using the components and values in Table 10. The estimate of the annual net system load for small customers (a) was divided by the seasonal factor (b) for each quarter to determine the estimated load for each quarter (c). The estimated load for each quarter is then divided by the number of hours in each quarter (d) and the load factor (as calculated in the Model) for each quarter to obtain the maximum load during each quarter (e) which is subsequently divided by 104 (the number of weeks in eight quarters[14]) to obtain the relevant weekly AMCOV value for each quarter (f).

Table 10 - AMCOV - components and values

Component	Calendar Year Quarter 1	Calendar Year Quarter 2	Calendar Year Quarter 3	Calendar Year Quarter 4	Total
Seasonal factors (b)	20%	28%	31%	21%	100%
Load - GWh (c)	514	738	794	554	**2 600 (a)**
Load factor	53%	47%	52%	48%	
Hours (d)	2 167	2 184	2 208	2 208	8 767
MW (e)	447	714	688	528	
AMCOV/week(f)	4.3	6.9	6.6	5.1	

2.5.1.2 Proposed calculation method

The Regulator proposed continuing with the initial calculation method and proposed sourcing the component values from parameters in the Model as shown in Table 11.

Table 11 Model parameters used in calculating the AMCOV

Seasonal factors	Seasonal Allocation (Load) - DerivedInputs Worksheet
Load - GWh	2 yr Avg Historical Tasmanian Load - DerivedInputs Worksheet
Load factor	2yr Avg Historical Net System Load Factor% - DerivedInputs Worksheet

Based on the Model values as at 30 June 2017 and applying the proposed calculation method, the Regulator proposed AMCOV values as shown in Table 12.

[14] Hydro Tasmania must offer, subject to conditions specified in the Instrument, weekly contracts for eight forward quarters (excluding the current quarter).

Table 12 Proposed AMCOV - components and updated values as at 30 June 2017

Components	Calendar Year Quarter 1	Calendar Year Quarter 2	Calendar Year Quarter 3	Calendar Year Quarter 4	Total
Seasonal factors	23%	25%	27%	25%	100%
Load - GWh	477	685	737	514	**2 414 (a)**
Load factor	54%	48%	52%	49%	
Hours	2 167	2 184	2 208	2 208	8 767
MW	465	577	582	554	
AMCOV/week	**4.5**	**5.5**	**5.6**	**5.3**	

2.5.1.3 Submissions

Hydro Tasmania's submission supported the Regulator's proposed approach to calculating the AMCOV values.

2.5.1.4 Regulator's decision

The Regulator has decided to use the calculation method and the values for the Absolute Minimum Capacity Offer Volume as set out in section 2.5.1.2 and Table 12 respectively.

2.5.2 Supplementary Offer Volumes, Headroom Buffers and Reserved Percentage

The values as at 24 March 2017 are shown in Table 13.

Table 13 Supplementary Offer Volumes, Headroom Buffer and Reserved Percentage as at 24 March 2017

Defined term	Value
Supplementary Offer Capacity Volume	20MW
Supplementary Offer Energy Volume	44GWh
Reduced Supplementary Offer Capacity Volume	10MW
Reduced Supplementary Offer Energy Volume	15GWh
Capacity Headroom Buffer	130MW
Energy Headroom Buffer	200GWh
Reserved Percentage	90%

2.5.2.1 Current calculation method

These values were largely determined using professional judgement after taking into consideration: discussions with market participants, forecast total Tasmanian load, small customer load and the volume of Tasmanian load hedged at any point. The inputs aim to provide retailers with flexibility in how they manage their hedging

strategies while protecting the interests of all retailers by specifying the volume that Hydro Tasmania must offer under regulated contracts at one time.

Where the difference between the volume of electricity hedged by Hydro Tasmania and forecast Tasmanian load (referred to as headroom) is equal to or greater than the respective headroom buffer values, the minimum volume Hydro Tasmania is required to offer under regulated contracts is the sum of the capacity or energy Absolute Minimum Offer Volume plus the respective Supplementary Offer Volume.

If the headroom falls below the headroom buffer value but is above zero the minimum volume Hydro Tasmania is required to offer under regulated contracts is the sum of the capacity or energy Absolute Minimum Offer Volume plus the respective Reduced Supplementary Offer Volume. To provide sufficient notice to retailers that the volume available under regulated contracts is declining Hydro Tasmania must offer at the Reduced Supplementary Offer Volumes for at least 12 weeks prior to reducing volumes under regulated contracts to the Absolute Minimum Offer Volume. Therefore the Headroom Buffers are set at around 13 times the value of the Reduced Supplementary Offer Volume values.

The Reserved Percentage is used in the scaling rules which apply when the demand for contracts is greater than the volume Hydro Tasmania offers in a particular week. The volume that each Retailer is offered is determined by their relative share of the standing offer customer load. However new (or recent) retail entrants could be disadvantaged by allocation based on existing load. Reserved Percentage adjustment factor determines the proportion of the minimum offer volume that will be allocated to retailers based on incumbent market shares.

2.5.2.2 Proposed calculation method

Prior to releasing its Consultation Paper, the Regulator had not received any requests from market participants to alter or review any of the values in Table 13 and therefore saw no reason to amend the values. The Regulator therefore proposed maintaining the current values.

2.5.2.3 Submissions

Hydro Tasmania's submission supported the Regulator's proposed approach to calculating the Supplementary Offer Volumes, Headroom Buffers and Reserved Percentage.

2.5.2.4 Regulator's decision

The Regulator has decided to use the calculation method and the values for the Supplementary Offer Volumes, Headroom Buffers and Reserved Percentage as set out in section 2.5.5.2 and Table 13 respectively.

3 NEXT STEPS

3.1 Adoption and update of revised values

The Regulator has decided to use the values for, and the approaches to updating, the Schedule 1 inputs as outlined in this paper.

The Regulator has also decided to update the input values in the Model to apply from the 5 September 2017 Allocation Date.[15]

3.2 Future reviews and updates

In conjunction with the release of the Regulator's *Final Report, Review of the Electricity Wholesale Contract Regulatory Instrument, December 2016*, the Regulator published a revised version of its *Statement of Regulatory Intent, Wholesale Contract Regulation Version 2.0 December 2016* (Statement). Section 4.2 of the Statement provides that all inputs are to be reviewed and updated as follows:

> Input values reviewed on an annual basis will be updated in July each year and apply for the first Allocation Date after the release of the Australian Energy Market Operator's (AEMO) annual National Electricity Forecasting Report.
>
> Input values based on AEMO data will be updated for the first Allocation Date after the publication of the data, including any updated data, on AEMO's website.

The Statement also notes that data may be updated more frequently if AEMO publishes updated data.

[15] Clause 28.1 of the Instrument defines Allocation Date as follows***:***
Allocation Dates means, for a Week, the day specified in the Guidelines as the day by which Hydro Tasmania must offer to enter into Approved Financial Risk Contracts (as nominated by Authorised Retailers in accordance with clause 18 and allocated, where applicable, in accordance with clause 27) in that Week.

4 APPENDIX - SCHEDULE 1 INPUTS

	Current Values	Revised Values [Note 1]
Table 1 Off-Peak Cap Values		
Off-peak Reference Cap Value	$0.33/MWh	$0.002/MWh
Off-Peak Cap Value	$0.33/MWh	$1.14/MWh
Table 2 Absolute Minimum Capacity Offer Volume		
Quarters ending 31 March	4.3MW	4.5MW
Quarters ending 30 June	6.9MW	5.5MW
Quarters ending 30 September	6.6MW	5.6MW
Quarters ending 31 December	5.1MW	5.3MW
Table 3 Supplementary Offer Volumes, Headroom Buffers and Reserved Percentage		
Supplementary Offer Capacity Volume	20MW	20MW
Supplementary Offer Energy Volume	44GWh	44GWh
Reduced Supplementary Offer Capacity Volume	10MW	10MW
Reduced Supplementary Offer Energy Volume	15GWh	15GWh
Capacity Headroom Buffer	130 MW	130 MW
Energy Headroom Buffer	200GWh	200GWh
Reserved Percentage	90%	90%
Table 4 Marginal Loss Factors		
Maximum Export Marginal Loss Factor	0.88	0.889
Maximum Import Marginal Loss Factor	1.064	1.066
Off-Peak Marginal Loss Factor	1.002	1.004
Peak Marginal Loss Factor	0.94	0.954
Average Basslink Flow Export	500MW	500MW
Average Basslink Flow Import	462MW	462MW
Table 5 New Committed Wind Generation		
Quarters ending 31 March	0	0
Quarters ending 30 June	0	0
Quarters ending 30 September	0	0
Quarters ending 31 December	0	0
Table 6 Calculation of Tasmanian Cap Values		
Costing Quarter	Quarter ending 31 December 2012	Quarter ending 30 June 2016
Economic Life	30 years	30 years
Forecast Inflation Rate	2.7% p.a.	2.5% p.a.
Nominal Post Tax Debt Cost	5.55% p.a.	3.44% p.a.
Pre-Tax Real WACC	8.0% p.a.	5.5% p.a.
Real Annual Operating Cost	$14.1/kW ($ as at Costing Quarter)	$10.13/kW ($ as at Costing Quarter)
Real Total Capital Cost	$1 016/kW ($ as at Costing Quarter)	$1 073/kW ($ as at Costing Quarter)
Construction Quarter	2026	2027
Table 7 Contract premiums		
Off-Peak Contract Premium	$3.40/MWh	$3.40/MWh
Peak Contract Premium	$15.60/MWh	$15.60/MWh

Note: the revised values apply from 5 September 2017